

**WHAT IS CLAIMED IS:**

1. A solid state imaging apparatus which includes a plurality of pixels two-dimensionally arranged in the row direction and the column direction and in which every two of the plurality of pixels in the row direction or the column direction that are adjacent to each other include color filters of different colors, respectively,

the apparatus comprising a plurality of signal mixture means, each of the plurality of signal mixture means being provided for each same-row and same-color pixel group consisting of ones of the plurality of pixels which are included in a pixel mixture unit to be a subject of pixel signal mixture, which are located in the same row, and which include color filters of the same color,

wherein each of the plurality of signal mixture means stores pixel signals from the pixels included in the same-row and same-color pixel group and mixes the pixel signals together.

2. The solid state imaging apparatus of claim 1, wherein said each signal mixture means includes a plurality of capacitors which are provided so that the number of the plurality of capacitors is the same as that of the same-row and same-color pixel groups included in the pixel mixture unit and a plurality of switches for guiding respective signals output from the plurality of capacitors to a shared output line.

3. A solid state imaging apparatus which includes a plurality of pixels two-dimensionally arranged in the row direction and the column direction and including respective color filters and in which colors of the color filters are two-dimensionally arranged so that colors in two rows or two columns as a unit repeatedly appear,

the apparatus comprising arranging means for grouping the plurality of pixels into

pixel mixture units each of which consists of  $p \times q$  pixels included in an area of  $p$  rows (where  $p = 4n + 1$ ,  $n$  is a natural number) and  $q$  columns (where  $q = 4m + 1$ ,  $m$  is a natural number), setting pixels constituting each of the pixel mixture units and located in even-numbered rows and columns from a center pixel at a center in the row and column  
5 directions so as to include color filters of the same color, and two-dimensionally arranging the pixel mixture units so that each of the pixel mixture units is shifted by  $(p + 1)/2$  pixels in the row direction and by  $(q + 1)/2$  pixels in the column direction and each of the pixel mixture units subsequently overlaps with associated ones of the pixel mixture units,

wherein signal mixture means for mixing pixel signals from ones of the pixels  
10 constituting each of the pixel mixture units which include color filters of the same color is provided in each of the pixel mixture units.